Applications Packages

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A Computerworld Special Report
February 28, 1977

Working Rapport Essential

User-Vendor Relationship Depends on Communication

By Bob Hill
Special to Computerworld

The installation of an application package can mark the beginning of a long and productive relationship between user and vendor. Or it may be the first in a series of disasters that will end in bickering, name calling and even litigation.

Which path the relationship takes will depend on teamwork between the user and vendor and the ability of both parties to communicate with one another.

There are several key areas which must be considered from the time the user and vendor begin negotiating the user's lease or purchase of software.

The first consideration is the personnel resources the user is willing to commit to the operation of the product. A user may assume the software will run itself with a minimum of manual interface.

The difficulty with this assumption is that the system is a new tool in the hands of the user. The input and output may be totally unfamiliar; it simply takes time to make the user's personnel knowledgeable enough to take full advantage of the product.

In addition, the use of a software package is usually preceded by increased work demands on the user.

> *'The working relationship established during the training period establishes a rapport between the user and vendor which serves as the basis for a strong communications link.'*

An increasingly successful business enterprise places additional burdens on its employees. Regardless of its use of a software package, the user's personnel is under intensifying pressure to produce.

By not taking such factors into account prior to the installation of the package, the user may find itself grossly understaffed to adequately operate the product or to carry on its business.

The second area of concern is the vendor's commitment to the training of the user's personnel. Although the vendor's responsibility in this area is usually defined in the lease or purchase agreement, the vendor must possess one quality above and beyond any contractual obligation: patience.

The vendor that is constantly working with its own product often forgets the uneasiness a user may experience in operating the new product. This problem may not only present itself in training sessions, but may also spill over into documentation which is overly technical and assumes a knowledge not possessed by most first-time users.

The working relationship established during the training period establishes a rapport between the user and vendor which serves as the basis for a strong communication link. In contrast, training and documentation that leave unanswered questions and confusion on the part of the user are ingredients for disaster.

A third problem is the user's unwillingness to express problems being encountered in the operation of the product. This is often due to the user's personnel not making management aware of processing problems, due possibly to the individual employee's fear that his inability to work with the product will result in termination of employment.

Although the user management is ultimately responsible for making the employee feel secure in raising such questions, the vendor can assist by never belittling a user's employee who asks a question or raises a problem. After all, such problems may not be due to the employee's actions (or inaction), but to bugs in the product of which the vendor should be aware.

Who Will Update?

The fourth and final concern is maintaining and updating the product once it is installed. Computer systems are designed to operate in the user's environment, which is probably under constant change; few users will be pleased with a

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User Groups Provide Forum for Ideas

By John Imlay
Special to Computerworld

Each year hundreds of user group meetings are held across the country for software users in every type of industry and business. In theory the meetings are designed to bring together management personnel of similar interests, so that they might share mutual problems and successes in their particular dealings with software packages. In participating in these conferences, they hope to learn different ways of dealing with the complex situations that can arise in doing day-to-day business.

Most software vendors sponsor these periodic meetings but many do not. In such cases, the user is left to his own ingenuity to solve his problems. And, in many cases, he is not intimately familiar with the technical idiosyncracies of his individual software application. Outcome: failure.

Thus the provision of these user group meetings is more and more a necessity, not only for the success of the user, but also for that of the vendor. As such, this is and rightfully should be, a deciding factor in determining in which software package a company will invest.

As publicity chairman of the Software Industry Association, I should use examples of the value of user groups from a number of vendors. As a vendor, however, I can't help but be most familiar with the experience of my own company and its users. I hope, therefore, that the comments that follow will be taken in a broader context even though they focus rather sharply on one company.

Annual, Regional Seminars

More than 20 different user meetings are held each year by the 2,300 users of software packages marketed by Management Science America (MSA). MSA markets nine financial software applications and sponsors user meetings for each application throughout the U.S. and Canada at least annually. In addition, regional meetings are organized periodically by the users themselves in order to lend greater continuity to the annual seminars.

Without active, interested users, the MSA products would not have kept up with the state of the art. Our individual user groups are a major reason for our success over the past five years.

Obviously, any management pondering the yeas and nays of automating or converting is vitally interested in the benefit derived from these conferences. And who can relate to management the utility of these sessions better than other management.

"The existence of user group meetings was very important in our decision-making process," Bob Patrick, vice-president of the Society National Bank of Cleveland, Ohio, said. "We eliminated one competitor because it didn't have a user group."

Any competent management is obligated to achieve optimum use of its expended dollars. Efficient use of hardware/software dollars comes not only with the exchange of machinery and magnetic tapes, but also with the exchange of ideas: ideas that cannot be related through the medium of a system, but only through the medium of people.

Yes, but doesn't management pay, directly or indirectly, for these meetings? "I have not attended a user group meeting that hasn't paid for itself. I've benefited greatly from talking with other users and seeing how they handle things. I would like to form a minigroup in Louisville so that we could meet more frequently," Dick Stemle, personnel director of the Louisville Trust Co., Louisville, K.Y, said. Dollars are measured in results and not merely in expenditures.

Is it worth the time involved, traveling often several hundred miles and spending from two to five days just talking? "I would never miss an MSA payroll user meeting, because if I get just one new idea, it's well worth the cost of the trip," according to Ed McGarvey, payroll supervisor for C.I.T. Financial Corp.

Wise Investment

"I only go to two conferences a year, but the MSA payroll meeting is definitely one," Stemle said. Time is money, but a wise investment of time is an equally wise investment of money.

"As a result of these meetings, I've established a close working relationship with other users in New York City," McGarvey said, "and we frequently discuss

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Vendor's Support Reputation Seen as Important as Product

By Don Leavitt
Of the CW Staff

MARSHALLTOWN, Iowa – A packaged application can satisfy both an in-house DP staff and the end-users "if you evaluate the people you're dealing with, as well as the package itself, before you buy," according to the director of information systems for a manufacturing firm headquartered here.

"Anyone can write code, but it takes the right kind of people to support it," Charles Kribs of Lennox Industries, Inc. explained, adding "if you get into contractual niggling while your system is down, you've got a problem – regardless of whose fault it is."

He was talking about the relationships he's built up with people from Martin Marietta Data Systems ever since Lennox, which builds furnaces and air conditioning units, began looking at and then installing the Material Requirements Planning (MRP) portion of Martin's Modular Application System (MAS) three and a half years ago.

Clearly Martin's people are "good guys" and their products good software in Kribs' view.

Few Choices

In the main, Lennox had no selection process when it picked the MAS MRP. The company was already using IBM's Requirements Planning System but found it had "serious shortcomings." There were no other packages, however, that had the flexibility Lennox wanted, so Kribs had to choose between the Martin

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This special report was prepared under the direction of Don Leavitt, Associate Editor. Cover art by Henry Fling.

On-Line Accounting Keeps Stride Rite a Step Ahead

BOSTON — While the manufacture of shoes is highly labor intensive, one company based here has managed — through on-line financial reporting — to maintain a profitable posture in the face of ever-increasing costs.

One of the key factors in the Stride Rite Corp.'s ability to continue profitable operations is the use of a completely on-line financial reporting system, the MMS General Ledger package from Software International Corp. linked to the Total data base management system from Cincom Systems, Inc.

According to Fred Brennan, Stride Rite's director of information services, "when we were making the evaluation of the complete system in early 1973, our target was to implement the package by the end of our fiscal year which was November 1973. We conducted the evaluation through early spring, finishing in June. Most of our work internally that summer was setting up our accounts, not changing the basic structure, but expanding it," he explained.

"Software International was creating its Total interface at that time. So through the summer while they were working on Total, we were getting ourselves ready. In August, we started generating files, distributing the interface for Total, etc." he said.

Most Important System

"General ledger and financial reporting is the most important accounting system for any company," Brennan said, noting that in addition to eight manufacturing facilities, Stride Rite operates 120 retail outlets nationally with 3,500 independent dealers.

"Because we're disk-oriented [working with an IBM 370/135]," Brennan continued, "we've been able to operate the MMS General Ledger via CRTs in an on-line mode. Right now we're employing a local network of 20 CRTs and will add four more shortly.

"The CRTs are located in various user departments throughout our corporate headquarters. In this manner, every user has direct access to the computer system. We do not interpose key entry or data processing personnel between the user and the system," he said.

All departments are considered users of the system, including financial sections, production, inventory control, merchandising and purchasing.

Hierarchy of Accounts

The MMS General Ledger and Financial Reporting System stores both budget and actual dollars for the current year, actuals for prior years and previous year comparisons. By creating a hierarchy of general ledger accounts and structuring them for different reporting purposes, the system is capable of providing budget vs. actual variance reporting, cost center reporting, product reporting and preparation of both fixed and variable budgeting.

A report writer capability allows the accountant to vary reports and formats and design new reports any time he wishes prior to month end, Brennan said.

By putting the system on-line, the closing cycle can be completed much sooner since the accountant can post his own journal entries and adjustments, he continued. This means all the different reports for all divisions, departments and financial areas are ready within a few days after the end of any period. Since all managers receive their reports days and even weeks earlier than under previous methods, action that affects each responsibility area can be taken earlier, too.

In addition, the package operates with complete independence from the logic of the account number, Brennan explained. It provides for a 24-digit number and can perform consolidation of domestic and overseas divisions and subsidiaries where the account number has no apparent relationship at all to the senior account.

Typically, an accountant at Stride Rite makes decisions on such things as what his journal entry or credit adjustment should be. Then he'll access a data entry program which is displayed on the screen and key in his information, "filling in the blanks." This data is written out on a transaction file. When the user calls the computer scheduler and says, "I want my files updated now," DP operations takes that information and processes it.

"For example," Brennan said, "information could be entered during the first two or three hours in the morning, followed by a request to update the files. We'll update the files at say 11:00 a.m. or 11:30 a.m. — a 10-minute run — and then the accountant has access to a freshly updated file, before he goes on to his next set of journal entries.

Staying Ahead

"These things follow one another, so that a set of entries is made, results examined, then more entries are made. In this manner, we can stay ahead of our accounting work load, rather than always be 'catching up.'

"At the same time," he added, "when one department is on-line to the computer, other departments can post their transactions and see what they're doing. Even though only one person at a time interfaces with the files, it happens so fast that they don't get in each other's way. So far, we've had no degradation in response time," Brennan noted.

"The system, therefore, is always on-line, examining the files as they exist at that point in time. Someone might have put in a dozen transactions that are not yet updated to that file and it may not be done until that evening, but the next morning the files are completely up-to-date," he said.

Fred Peacott, accounting manager, described the reports the system generates: "In addition to balance sheets, profit and loss (P&L) and cost center reports," he said, "the system also provides cost of sales reports (including cost per pair) and retail expense analysis. Over 100 wholly owned retail stores are measured on a P&L basis.

"There are also depreciation and amortization reports and interest and expense reporting for the Federal Trade Commission. A detailed chase of all balance sheet accounts can provide a complete listing of accounts in detail at any time. There are also a wide variety of other reports on call at any time they are needed," he said.

"We're particularly pleased with the interactive benefits gained from an on-line data base general ledger," Brennan said. "It allows users throughout the company to access information without interference from the DP department. At the same time, because key-entry is no longer involved, any mistakes generated by the user are caught quickly — and the compounding of errors normally experienced when a whole string of people get involved in a transaction is eliminated," he added.

RAMIS REPORT #3

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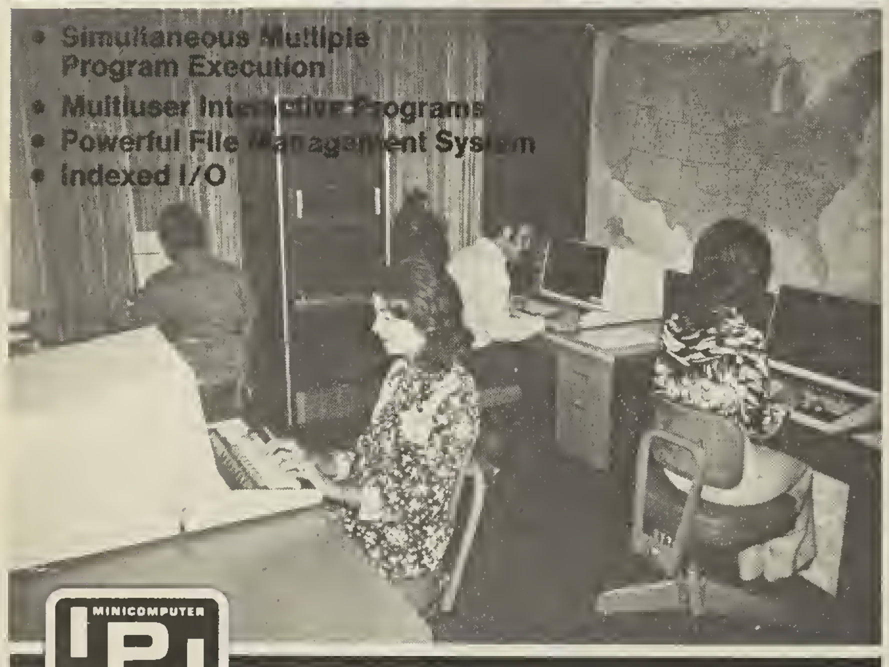
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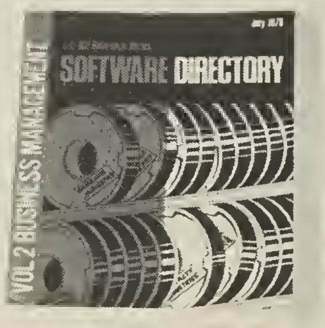

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User, Vendor Must Cooperate To Ensure Success of Package

By Sheldon Ellish
Special to Computerworld

As a vendor of two (soon-to-be four) financial accounting software packages, Argonaut Information Systems has acquired a broad base of experience with a wide variety of computer users. Being on the receiving end of many inquiries about our packages, I have observed that the level of sophistication at which the selection process takes place is dependent upon the experience, knowledge and investigative skills of the evaluating team (or individual).

The effort involved in the evaluation and selection process varies from extensive questioning and investigation of all the users on our reference list, as well as requesting a benchmark test after spending many months looking at all the packages available, to purchasing a package based strictly on price within a few days of receiving only an introductory information brochure.

The software purchaser should be as protective of his company's investment as he would be if personally purchasing a new car or major appliance. Finding out as much as possible from all available sources and knowing (and then communicating to the vendors) what specifications are essential, as opposed to those that are merely desirable, are two of the most important factors that will determine the success or failure of the system.

At the same time, the vendor has a moral and ethical obligation to provide the prospective purchaser with all the requisite information to make an intelligent choice, including the experiences of other user installations that are similar in size, industry, computer configuration and interface requirements.

The more the user is willing to commit resources of computer time, as well as the time of clerical, technical and management personnel, the more successful the implementation will be. Whether the vendor or user installs the system, the need to get involved from the very beginning cannot be overemphasized.

Communication Failure

If sufficient computer time has been allotted, if the user departments have been included as part of the implementation team, if all known program changes have been identified and made — then the installation stage should proceed smoothly with little or no difficulty. When this stage fails to go smoothly, it almost always is due to a failure in communication prior to the beginning of the implementation. Either the vendor has not revealed all the nuances and subtleties hidden in the documentation or the user has not described all the various idiosyncracies in his computer installation.

The length of the implementation stage, if all communication has been clear and complete and the computer has been available for use when needed, will depend on whether any modifications are made prior to or during the installation. Often users will request changes in report formats, sequences, summary totals, etc., after initially seeing the output. Both the vendor and the DP department should be careful at this point to review these user requests for cost and impact on the implementation schedule.

Because actual experience with a package once it's installed does not always match the user's expectations, the vendor is often asked to make modifications immediately. Sometimes this can be done for little or no cost, with little or no impact on the implementation schedule. At other times, it is better to let the system run for a few weeks or months before making any changes, since the original package may turn out to be as good, if not better, than what the user first wanted.

If the vendor and purchaser have been communicating openly and clearly from the beginning, then any user requests for changes will be minor. If the actual usage of the system leaves the user dissatisfied and disappointed, all parties concerned are equally responsible for not communicating their needs.

Modification Policy

When requests for minor modifications do occur during the implementation stage, our policy has been to incorporate these changes at the time of installation at no charge, if the time involved does not exceed the maximum number of hours we have agreed to. If the time involved would exceed the number of hours we originally agreed to, our policy is to negotiate an extra per-hour fee for this work.

The free support we provide consists of round-the-clock availability via the telephone to answer any questions, including which programs to change in order to modify the system for a specific purpose. We also correct any logic errors that may occur at no charge.

Again, if the user is not satisfied with the level of vendor support after installation, then the purchaser either failed to explicitly demand that this feature be included in the contract or else did not clearly understand what was stated in the contract.

As more users become more sophisticated and begin to recognize their own responsibilities during the contract negotiating stage, and as more vendors gain the knowledge and experience necessary to market, customize and install their software packages, the software industry as a whole and the individual user installations will mutually benefit from the resulting maturity.

Ellish is vice-president of Argonaut Information Systems, Inc. in Berkeley, Calif.

Hospital Learns the Hard Way; Small System Has Limitations

By Don Leavitt
Of the CW Staff

PORTLAND, Ore. — "Not Just Data, Reality," an advertising slogan once used by IBM, is also an ironic summary of one user's future plans after an unhappy attempt to use IBM hardware and software beyond its design limits.

The situation arose when the administration of two separate but geographically close hospitals tried to use a system designed for a small facility to support a larger establishment as well.

The institutions involved are Dwyer Memorial, a 70-bed hospital in suburban Milwaukee, Ore., and the Holiday Park Hospital, a 195-bed facility here in downtown Portland.

The hardware is the IBM System 32, one in each hospital. The software is the Hospital Financial Management System, one of the Industry Application Programs (IAP) IBM promotes to get first-time users up and running on the 32.

Before the computers were installed, Holiday Park posted patient records and billings with a cumbersome and outmoded, essentially manual, technique. It used a computer service, but only for payroll. Dwyer Memorial used a service for patient billings, accounts receivable and payroll processing.

"By late 1974, it was apparent something better was needed if we were to ensure the operating efficiency and gain the manage-

(Continued on Page S/18)

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Datacom DB, CIM	8	3.3	3.4	3.0	3.4	2.3	3.4	3.1
DBOMP, IBM	48	3.0	2.6	2.4	2.7	2.5	2.7	2.4
DL/1, IBM	29	2.6	2.4	2.3	2.4	2.4	2.5	2.6
DMS-II, Burroughs	5	3.8	4.0	3.6	3.6	2.8	3.0	3.2
GIS, IBM	7	2.4	2.1	2.1	3.0	2.7	2.6	2.3
IDMS, Cullinane	**17**	**3.8**	**3.3**	**3.4**	**3.6**	**3.0**	**3.6**	**3.5**
IMAGE, Hewlett-Packard	11	3.6	3.3	3.7	3.2	2.8	2.9	2.7
IMS, IBM	33	2.9	2.4	2.2	2.5	2.8	2.8	2.9
INQUIRE, Infodata	6	3.2	2.2	2.7	3.0	2.5	2.8	2.6
Model 204, C.C.A.	3	3.7	3.3	3.3	3.3	2.7	3.3	2.7
SYSTEM 2000, MRI Systems	21	3.0	2.3	2.9	3.5	2.4	2.7	2.1
TOTAL, Cincom Systems	113	3.5	3.1	3.4	3.4	2.8	3.0	2.8

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Despite Some Rough Spots

Non-IBM User Faring Well With Packaged Programs

By Don Leavitt
Of the CW Staff

PHOENIX — It has always been easy to get help through packaged software if you're working with an IBM mainframe, but how well does the installation with other equipment fare now?

Fairly well, apparently, if the experience of General Host Corp. and its data center here is at all typical. There have been some rough spots, admitted project leader David Falkenstein, but "we're into our third 'adventure' with packages and we like them. We'll probably get more next year."

General Host is a New York-based company in food and food-related businesses. Until about two years ago, it had highly diversified DP operations: some of its subsidiaries had IBM 360/22s or 30s or System 3s, some had Honeywell 120s and some had no in-house computer capability, Falkenstein recalled.

Corporate management decided to establish a single center here at Cudahy Foods, focusing on this subsidiary's needs first. In August of 1975, a group was chartered to put together the center and develop the applications.

Three Task Groups

Financed, owned and managed by General Host, the center has a Honeywell 66/20 CPU with 256K words of memory and the standard GCOS operating system. The group was broken into three task groups, one each for financial, marketing and manufacturing projects.

Falkenstein's financial group has been working on general ledger, payroll, accounts receivable and a management reporting system for Cudahy, which is primarily a pork processing company with manufacturing facilities from Seattle to Atlanta and a total of 30 reporting locations each with its own P&L and balance sheet.

General ledger seemed an ideal candidate for use of a package rather than in-house development and since Falkenstein had picked a ledger package at his previous job, just before he joined General Host in late 1975, he had some idea of what was available.

This time the search started with the *ICP Software Directory*. Though "there must have been 50 or 60" packages there, Falkenstein "threw away" all that seemed designed for small systems. He "picked 12, sent for brochures and then eliminated half of them because they were 'just pure IBM' packages. The vendors weren't even interested in talking to a Honeywell user," he said.

More evaluation narrowed the field to four and presentations by the vendors led to the choice of Informatics' Accounting IV. "It had the best features of the three we looked at closely and Informatics offered by far the best support for a Honeywell site," Falkenstein said, "so we bought it and have been very happy with it."

Initial Problems

But Falkenstein was not without problems at first. General Host worked with Informatics and with a conversion package provided by Honeywell to adapt what was basically IBM code to its new environment. In the process, Falkenstein ran into "some efficiency problems" which subsequently were solved through changes in the Accounting IV code.

The original Cobol included some subscripting and the conversion package couldn't cope with it. "It lost the computational aspects of the subscript — so we had to put them back in," Falkenstein explained.

That was a problem with the converter and not with Accounting IV, he noted, "but it was still a problem. We got the programs to run on our machine but our substitute code meant one of the programs ran for 'four and a half days.' "

Informatics "didn't understand the converter any better than we did at that time," but when General Host asked them to fix things, the company did. "They improved the run-time processor utilization by a factor of 114," Falkenstein said, acknowledging that such improvement couldn't have been hard considering run-times when they started.

Since then, General Host has added its own front- and back-end extensions to Accounting IV, but hasn't modified the basic package itself. It gets all but one very specialized report from the system and that includes consolidations up through four levels of organization. The current period is the fourth to be handled by the package.

Adventure Continues

But general ledger isn't the end of Falkenstein's work with packages, and his evaluation and on-going installation of a payroll system indicates things may be getting better for the non-IBM shop.

Last fall he reviewed several possibilities and finally purchased a payroll package from Cyborg Systems, a Chicago software house. Here again the vendor helped with conversion to a Honeywell environment, but Cyborg worked at the problem "a little differently" than Informatics, Falkenstein said.

In the first place, Cyborg's "relatively new package" was written in "absolute, honest-to-God ANS Cobol" and that meant Falkenstein didn't run into most of the problems he had experienced working with coding — like Accounting IV — that was written years ago, the project leader said.

Beyond that, Cyborg recognized that some things had to be unique to a particular computer. For each of those parts of the programming that might create a problem, the vendor had one paragraph for IBM, another for Honeywell and perhaps another for Burroughs, Falkenstein explained.

Basically, he commented, "a lot of good standards we have today just weren't there — or weren't being adhered to when earlier packages were developed." Cyborg's system is made up of three programs — the classic, but sometimes forgotten, division of edit, update and report.

Files are being generated and other preparations are under way to go live with payroll processing for about 1,000 of the Cudahy employees "soon," although Falkenstein was reluctant to name a specific

(Continued on Page S/10)

	TLMS Release 4	Other
On-line updating and inquiry	Yes ✓	Yes
Alternate logging capability	Yes ✓	No
Protection of scratch and non-scratch status	Yes ✓	Yes
Audit and inventory reports	Yes ✓	Yes
Console sharing for multiple CPU's	Yes ✓	No
Automatic scratching of tapes	Yes ✓	Yes
Simple interface to OS	Yes ✓	No
Scheduling and control of tapes being moved to off-site location	Yes ✓	Yes
Automatic uncataloging of scratch tapes	Yes ✓	Yes
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Prices Seem High, But...

Mini Users Gaining Appreciation of Software Costs

CARMEL, Ind. — Does minicomputer software cost too much? That is the question posed by a feature article in the current issue of *Interface*, published by International Computer Programs, Inc. as an adjunct to the semiannual ICP Software Directory.

The answer appears to be: "No, it's not too high considering what is provided — but there are ways that will develop in time to bring costs down and to make the mini user a better shopper in the software market."

The question arises, according to author Dennis Hamilton, because business-oriented mini users, even more than shops with full-sized mainframes, "must rely on the guiding hand of external software sources."

The mini users he is concerned about are not DP-oriented, Hamilton said, adding "software is generally a word that sends them scurrying to consult Webster's Unabridged [Dictionary] — usually after they've taken delivery of the iron."

That degree of innocence could make them "raw meat for vending predators" and brings to mind the original question. But, the writer added, it also raises other questions that seem to need answers before we can reach a conclusion on the first query.

Does mini software, application for application, cost as much as maxi software? Is there any reason mini software should cost less? Is the hardware-to-software cost ratio for minis justified? These are the questions spawned by the original one, he said.

Tackling the cost ratio query first, Hamilton noted "it is rare that software will come higher than hardware . . . With minicomputers, however, odd variations occur in that ratio and they are rarely in favor of the software."

Since mini hardware prices "start around $12,000 to $15,000, can exceed $100,000 and average around $40,000," the user can achieve a 1-to-1 ratio "very easily" starting at the low end of that spectrum, "especially if the software is a custom application."

Returning to an earlier point, Hamilton said the mini user "is not likely to be a programmer" and has to seek help from custom shops, software package houses or hardware vendors. Even if he bypasses the custom route, he can still wind up with a 1-to-1 ratio, depending on the product he needs.

Sometimes the problem is psychological, Hamilton suggested, citing the case of an accounts payable system that fits "both ends of the hardware spectrum — from System 3s to 360/370s." The vendor has a single price — $10,000 — for the package regardless of the hardware on which it will reside.

"Posit that figure to the [cost of full-blown] hardware and it seems tolerable enough. But try to convince the buyer of mini software that a [working] system [including an operational application] is going to cost half again or more what his hardware did, and you become entangled in the fine art of Explaining Software."

Hamilton quoted Edward Horst, formerly of Comtech USA, Inc. — the vendor of the $10,000 "payable" package — who told him, "If I had to rank tasks, the first would be education of the software buyer, establishing an appreciation of the value received...You have to let them know that DP costs are not the same as monthly rental on the hardware.

"As a matter of fact mini users are no different than anybody else," Horst continued. "They can expect that their hardware is going to be about 33%-35% of their total DP budget. That goes for large- and medium-scale gear and minis. The proportion is all the same.

"The guy with the 360/40 might have a bigger staff, but he also has bigger hardware. They still have to prepare data, etc.

"When somebody gets a minicomputer and finds out what (he) can do with it, and (he) sees all the applications that need to be done, (he) can see the truth. It is simply not a part-time job for some guy who works in the accounting department and the reallocation of a secretary to be the console operator. It just doesn't work," he said.

The eyes of some mini users open easily; "others wouldn't open with a stick of TNT,", according to Horst. Many of these mini buyers are looking for total solutions and are basically one-stop shoppers. They have a certain function they want automated and they want a complete turnkey system to handle it.

It's a simple solution, Hamilton acknowledged, "but in some cases, it's not the best one."

Even if the mini users accept the idea behind software and the idea that it can be priced separately from the hardware, there is still the lingering concern that since

(Continued on Page S/17)

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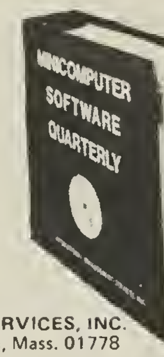

Extended Calculation Package Gives McDonald's Tax Accountants a Break

By Don Leavitt
Of the CW Staff

OAK BROOK, Ill.— Many users seem satisfied with a software package if it just does what the vendor claims it should do. There is a user here, however, who liked what his package did, but pushed it far beyond its original design goals and saved his company "probably millions of dollars" in the process.

The user is Randell C. Branham, tax manager at the corporate offices of the McDonald's restaurant chain. The package with which he has been working for the past 3-3/4 years is Smites, a state corporate tax calculation system from Cogna Systems, Inc. of Chicago.

Profound Effect

Branham acquired Smites in the spring of 1974 when he realized his five-man staff needed something that would cut down on its manual effort and eliminate the burden of filing some 30,000 different income tax returns with authorities all over the country.

The acquisition had a profound effect on Branham, partly because of the way the package was designed. Most packages, he explained, end up in the DP area and no one except DP knows about them. But Smites is user-oriented and user-driven "so all of a sudden when we bought the package, I was put in charge of the darn thing."

First Things First

The first thing he did was train his tax accountants to utilize the package: If they couldn't use it, there was no need to do anything else. Once that was done, the DP people at McDonald's "wrote whatever they had to or did whatever it took to make the package compatible" with the corporate office's IBM 370/145.

Installation was all the DP professionals were expected to do with Smites at that time, although they would have stepped in to help if Branham and his tax people had any special problems. There were no real problems, the manager noted, and the accountants soon had some 80 calculation methods set up under the package.

> *'The accountants "really grabbed hold of the thing because they could see it saved them a lot of work."'*

The accountants "really grabbed hold of the thing because they could see it saved them a lot of work," he said.

Extensions Begin

Then the extensions began. The accountants sought interfaces to the general ledger files and ultimately the DP staff suggested creation of a universal interface so the users could work with whatever files they wanted. So now Branham's office has access to payroll, fixed assets and "the whole data base" in addition to general ledger.

Working closely with the company's DP staff and, when necessary, with the vendor, Branham called for and got front- and back-end routines that enabled the accountants to use Smites for personal property tax returns that the 1,000 corporations that make up McDonald's had to file. Then they started doing estimated tax calculations on the federal level, again an extension well beyond the state corporate income tax work for which

(Continued on Page S/16)

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The views expressed are those of Director Dorothy J. Hopkin and not necessarily those of the University of Illinois.

User Turns Mainframer Software into 'Neat' Package

By Don Leavitt
Of the CW Staff

ST. PAUL, Minn. – Sometimes software available from a mainframe vendor is enough to get a DP shop up and running, with a little help from the user to make the programs fit just right.

That at least has been the experience of the small DP staff of a merchandise organization based here. General Trading Co. has a 128K NCR Century 151, a modest collection of programs, two operators, a programmer and a DP manager.

From such a base, Roger Fling, the DP manager, is able to support the sale and distribution of tires and other automobile parts through 128 franchised General Trading stores and another 250 independent outlets that don't carry the company name.

He has also been able to do his work so effectively that General Trading was the initial pilot site for NCR's B3 multiprogramming operating system installed on a Century 151 in November 1975. In fact, Fling did the conversion work so smoothly, with coaching from the local NCR staff, that he left an NCR specialist gasping when she arrived to oversee the operation and found it already done.

A Pinch of This . . .

Operating systems obviously help a DP center, but it's the application programs that help the end user and, ultimately, justify the existence of the data center itself. Fling has been perfectly happy to use some NCR programs, to develop some in-house and to go to outside sources for at least one other.

He's not a glutton for punishment and is willing to use things "as is" if he can. The NCR general ledger package, for example, is used just as it comes "straight out of the book." So is NCR's payroll package and the mainframer's accounts payable system as well, Fling said.

General Trading's on-line order entry system includes parts of NCR's approach to the same problem but not the whole system. As Fling explained, the NCR package did things one way (or, in some cases, left them undone) whereas General Trading had had a computer before and wanted things done its way.

"So we pretty much rewrote most of the order entry system," he said.

The two-man staff also wrote the company's billing runs and its purchase order processing programs. All of this work, as well as all the packaged applications, are written in NCR's unique Neat/3 language which Fling has utilized ever since the company shifted from a Honeywell 1200 and got its first Century (a 100) in 1971.

Accounts Receivable

General Trading's accounts receivable system came into being over a different route. Fling drew up the specifications of the system he wanted and the price he'd be willing to pay to have the work done and gave them to a group of four or five programmers he knew personally.

They all knew the NCR Century environment and Neat/3 so they told Fling they'd do it for him at his price. Together they set up guidelines for the project and the system emerged with all concerned reasonably happy.

All the applications are batch systems running in background mode, except for the on-line order entry processing.

There was no reprogramming required when General Trading went to B3, Fling said, since all they had to do was to get the programs to run in partitions instead of in the whole machine as they had under the B1 batch operating system or the B2 on-line system.

"Basically, we lied to the system and told each partition it was running by itself," he said with a glibness that dared anyone to ask for more details.

The company's complete devotion to Neat/3 as a programming language would seem to lock it into an everlasting tie to NCR but Fling denied his situation was that one-sided. In any case, he added, he's happy with NCR and such a close relationship doesn't bother him at all.

He noted, however, that he had been contacted by a company "down in Atlanta or someplace down south, I think" that offered a conversion service to take Neat/3 to "almost any other system. They must be talking about converting to Cobol," he surmised, "and they guarantee 85% complete conversion," so General Trading could move its programs if it ever really wanted to.

But Fling said he hadn't said or done anything to bring on the offer from the conversion service. He said a friend of his who had become discouraged with NCR probably gave the service his name in return for a cut in cost of the service for his own work.

But General Trading and Fling will stick with NCR. The company's Century 151 can be doubled in memory and "there seems to be no limit to the peripherals that can be attached." If all that can't cope with the company's DP needs, there are bigger, more powerful CPUs in the Century line, Fling noted.

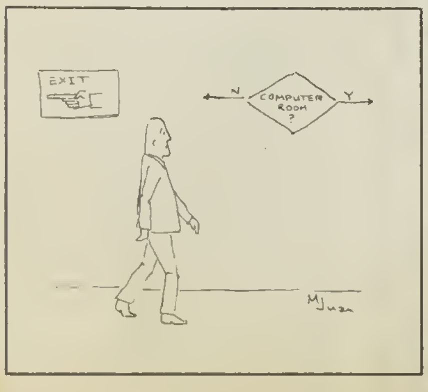
Packages Fill Needs Of Non-IBM User

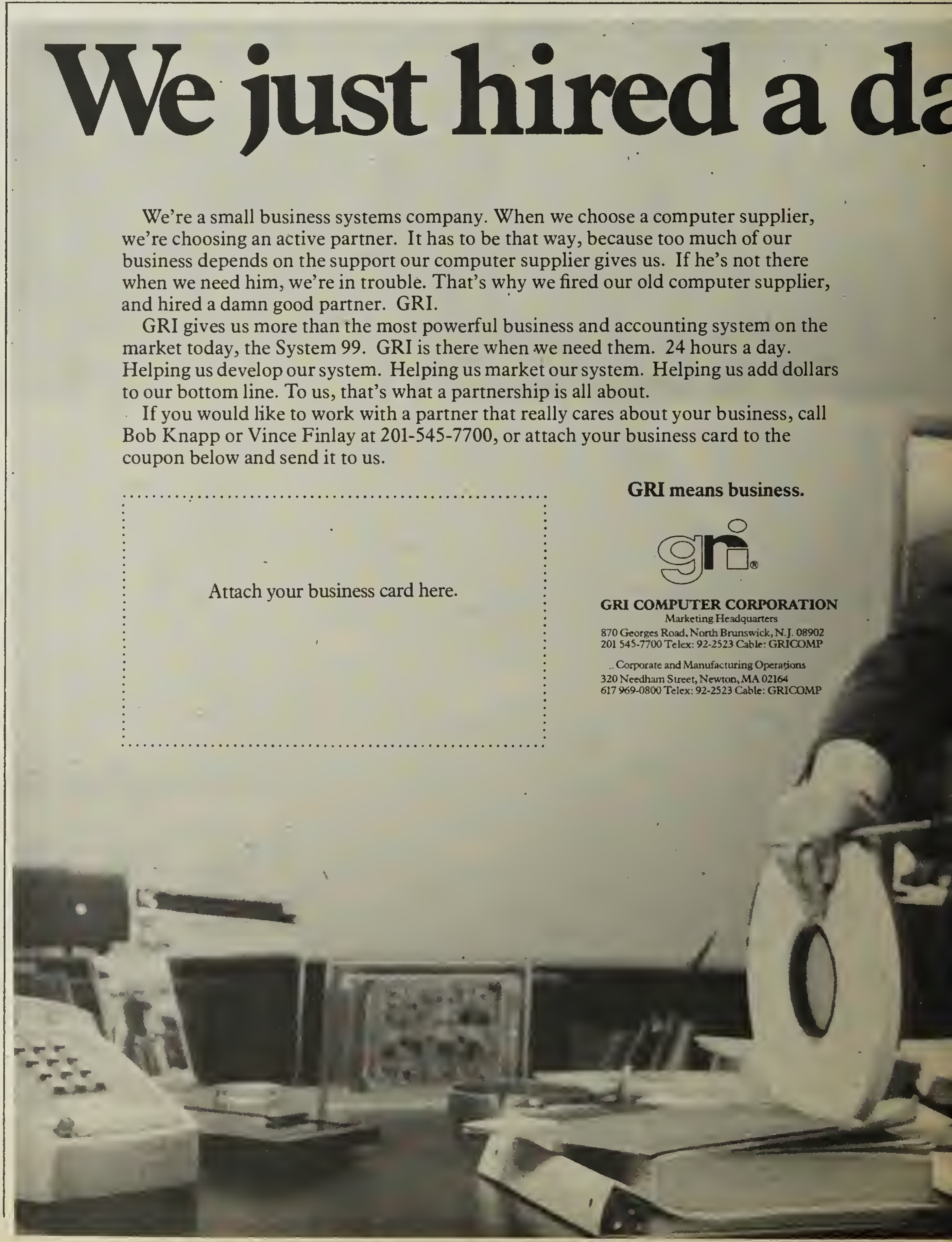
(Continued from Page S/6)

target date when he talked about his plans in mid-January.

The financial group at the General Host data center isn't the only one working with packages. Falkenstein said the manufacturing project has gotten a free package from Honeywell and is now "spending a bunch of money modifying it to our specs." The changes in Honeywell's Inventory Management System are in the areas of cost accounting and material requirements planning, he said.

The work is being done under contract by A-1-O Systems Management Group in Willoughby, Ohio, and is still another approach to getting outside software in shape to serve the user's needs.

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Creates Productivity Objectives

Management System Monitors Hospitals' Personnel

PORTLAND, Ore. — Most workers don't like having the time and effort they spend on the job monitored. Nonetheless, more than half the hospitals in Oregon are successfully using a computer-based management engineering tool to increase the effectiveness of their personnel.

Sponsored by the Oregon Association of Hospitals, the Productivity Management System (PMS) is characterized by Roland S. Hanson, the association's senior systems engineer, as a closed-loop control system.

"It provides for establishment of departmental labor productivity objectives, a plan to achieve the goals and a continual comparison of performance vs. goals," he said. However, it also includes the means for taking any necessary corrective action and the establishment of subsequent goals, he added.

The system can be used by both large and small hospitals. Since many of these institutions have neither the staff nor the inclination to run in-house DP operations, PMS has been built on the programming and processing facilities of the Tymshare, Inc. network based in California, the engineer said.

The association's first PMS was installed two years ago by Hanson and program director Ron Ellingson.

Hanson's prior computer knowledge was minimal; his programming knowledge, nil. However, he "easily learned" to program a hospital's system using Tymshare's Information Management Library (IML) and is now rewriting it using the network's Magnum data base facilities.

A couple of the largest hospitals have their own terminals and individual accounts with the network. The association has a terminal on which it runs work for mid-sized hospitals, but even that is too expensive for the smallest units and they apply the PMS concepts manually, Hanson said.

Goals Established

Installation of PMS is quite simple, according to Hanson. It starts with a gathering of work load statistics by department for the previous year. The average number of staff hours expended per patient day in that prior period then becomes the unit of measure or goal for the department for the current year.

(Although hours expended is the common measure for most departments, Hanson interjected, other units are used when they seem more logical. Number of surgeries or hours of surgery are the units for operating rooms; "procedures" are used for nuclear medicine, EKG and radiology; meals served for dietary departments.)

In general, then, the only inputs needed after the setup of the system are hours worked by each employee and the work load for each department by month.

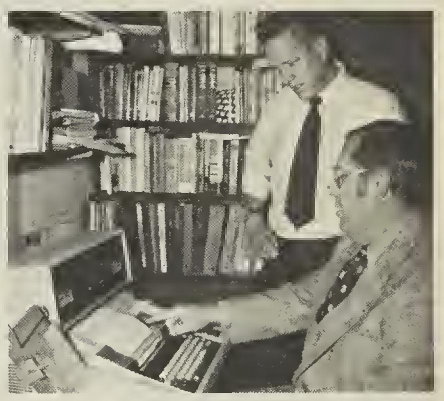
"Once we've gathered the statistics for a hospital's prior year and provided a means of gathering current information from then on, the hospital administrators are in the business of improvement," Hanson said.

Obviously a key report of the system is a monthly departmental analysis of productive staff hours vs. target or goal hours. This report also shows the dollar savings or added cost, by month and year-to-date, as the current year's figures vary from the target.

As an example, Hanson cited a nursery that had expended an average of 4.47 hours per patient day last year, but by July of the current year had brought that figure down to 3.83 hours or 0.64 fewer hours per day than the target. Multiplied by the 355 patient days that month and the department's labor rate of $5.41, the nursery showed a savings of $1,229 for July.

Exceptions Reviewed

As long as productive hours are less than goal, i.e., a production gain, no corrective action is required. If, however, average hours expended are higher than goal, a simple exception report is required. On it the department head identifies the primary cause of the productivity discrepancy and his plan to improve during the subsequent month.



Roland Hanson and Ron Ellingson, both with the Oregon Association of Hospitals, discuss a manpower productivity report.

The report of possible causes is reviewed by the department head and an administrative officer both at the time remedial action is taken and a month later. Hanson recommends reports be available by the 10th of the month following the month being reported. This, he explained, offers an opportunity for corrective action to be effective the following month.

Another report consolidates monthly totals and offers administrators a department-by-department review of productive hours vs. target hours. As on the department report, it shows payroll dollars expended for above-target performance or dollars saved for hours expended below target.

Still another summary report compares dollar loss or gain performances from one year to the next, for each department. Previous goals and their percentage of attainment are the basis for discussions by department heads and administrators for establishing next year's targets. If results for the year are less than target, the results usually become next year's target. If not, a new goal is jointly established.

The purpose of the system is not simply to conserve labor. The program is viewed by the Oregon association as a means of more efficiently utilizing technical, administrative and support personnel. It further serves as a means of rationally projecting manpower needs and budgetary requirements for various levels of hospital activity.

mn good partner.

Dependable Support Viewed as Important as Product

(Continued from Page S/2)

offering and an in-house development.

The company chose the package route, but even that wasn't easy. Lennox had "pieces" of IBM's Production and Inventory Control System (Pics) and "some of our own code," Kribs said. "Since we didn't want to redo all that, we took it upon ourselves, with help from Martin, to modify the MRP programs.

It had to interface with IBM's Bill of Materials Processor (Bomp) and with Lennox's existing programs. That was a tough assignment, Kribs said, since it meant taking an existing system, interfacing it with several other existing systems and using it in an environment in which it had never been used before.

Support Provided

Martin provided "a couple of guys" on-site here in Marshalltown for about two months during the initial implementation phase, the Lennox manager recalled. During that time – and since – both Lennox and Martin learned a lot about the system.

Kribs "can't say enough about the support they gave us." He said after the resident Martin people left he always felt he could call for help. If Martin couldn't solve it over the phone, "they'd load a guy into an airplane and ship him off to beautiful downtown Marshalltown."

No 'Niggle-Naggle'

"We never got into any niggle-naggle about who was going to pay for what before the problem was solved. If it was a DOS-Bomp problem, it was a first for them too. Besides we put an equal amount of manpower into the project," he said.

"After the problem was solved, we'd argue about whose fault it was. Sometimes I'd buy dinner, sometimes they would, but we had a system that worked and even if I had to call them today, when we're way outside the contract period, they probably wouldn't bill me for their help. They never have," he added. manufacturing sites with remote job entry facilities and 21 warehouses, as well as two Canadian locations, Kribs said.

Unsolicited Praise

Are the end users happy? Kribs said MAS MRP is the only application he has ever installed that brought him unsolicited letters from the factory managers, thanking him for the system. "I got a six-page letter from a guy who'd been the biggest antagonist we had as the system was going in; I nearly fell off my chair."

Kribs has helped to install even more of the MAS collection of applications at Lennox's small factory over in England. There the support from Martin and the results are as good as here in the U.S., but the approach is quite different, he said.

The English operation had no preexisting programs so Lennox and Martin started fresh. "We're using the other MAS modules that were designed to support MRP. We just took off and used the inventory control module and the whole thing works, and it seems to be working well," Kribs said.

The only problem the company is having in the UK arises from the fact that the Lennox facility there is too small to justify its own data center. So it is running the MAS modules at a service bureau and "that, as might be expected, is a little difficult, communications-wise," according to Kribs.

The MAS experience has been good enough on both sides of the Atlantic so that Kribs has begun talking to Martin about acquisition of the purchasing system modules. Lennox is using a much modified version of the inventory control system from IBM's Pics and that apparently will stay in place for the foreseeable future.

Payroll Program

The company is in the market for and has begun actively looking at payroll programs, he added. "We've got five old systems now and we're really thinking of getting one good one and putting everything under one roof. We won't try to write one ourselves," he added.

Particularly with the number of payroll packages now available, Kribs expects to follow his basic approach of screening out the unacceptable vendors before even looking at the technical characteristics of any packages.

He'll look at the vendors' "track records," check their Dun & Bradstreet ratings "and generally see if they'll be around a while." Then he'll probably talk to users of some of the packages that are still in the running, to see how well the vendors really come through with support when it's needed.

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Reduces DP Costs by 33%

Coca-Cola Gives Its Franchises 'Basis' for Savings

By Udo Kellerbach
Of the Computerwoche Staff

VIENNA, Austria — Sometimes the best application packages for a subsidiary or affiliated company are those developed by the firm that best knows its needs — the parent corporation. The Bottlers' Accounting and Sales Information System (Basis), for example, is a package designed and supported by the Coca-Cola Co. to help its franchised bottlers improve their business operations.

By using Basis instead of developing their own software, the bottlers can save up to 33% of their DP costs, according to Coca-Cola estimates.

Design work on the software was started six years ago and was based on experience gained from several years' use of similar but less complete packages. A special international team of computer specialists and business analysts was set up here in Vienna to handle the project.

There were people from 14 or 15 countries on the team, including George Adriaenssens, a Belgian, and Ron Smith, an American, both of whom are now at the Atlanta, Ga., headquarters of Coca-Cola U.S.A. To date, more than 120 man-years of effort have been invested in the project.

The package presently consists of 30 applications covering almost all operations of the bottling plant including marketing. Support now ranges across route planning, sales accounting, invoicing, stock reporting and daily and monthly sales analysis. Further applications continue to be designed and developed, a spokesman added.

Written in RPG with Assembly subroutines, Basis can be used on IBM 32 small business systems and on the System 3 range as well. Remote DP operations are also supported on IBM's 3741 terminal. The facilities and economy of use of the package can therefore be realized by virtually any size bottling plant, the company noted.

On-site implementation of Basis is the responsibility of the local national offices of Coca-Cola, with help and supervision from the development team. Installation and subsequent operation of the system is said to be made easy by the availability of comprehensive documentation on all aspects of Basis, both managerial and operational.

> *'By the end of this year, the developers expect it to be in use in 13 countries by at least 83 bottling operations.'*

To date more than 50 users in 11 countries have adopted the package and almost all are using the whole range of 30 applications. By the end of this year, the developers expect it to be in use in 13 countries by at least 83 bottling operations. Although the package carries a price tag, a spokesman at Coca-Cola U.S.A. declined to provide any specifics on the costs. He noted, justifiably, that prices vary from country to country and that changes in international rates of exchange make the quoting of any price now for publication later — as in the case of this article — at least impractical and possibly dangerous.)

Due to the basic similarity of the bottling business, regardless of the specific soft drinks involved, Coca-Cola acknowledges that the logic and indeed the coding of Basis could theoretically be used by companies outside the developer's franchise system.

There are, however, no plans now to market Basis as a software package to outsiders, the spokesman stated.

User-Vendor Rapport Depends on Dialogue

(Continued from Page S/2)

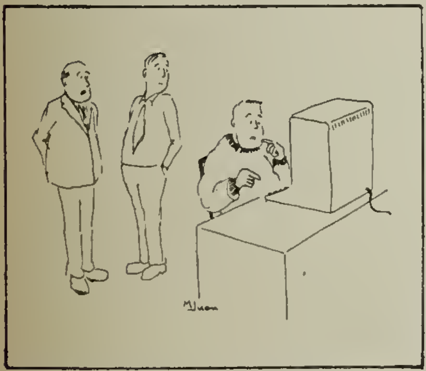
product which is obsolete on the day it is installed.

Once again, clauses in the lease or purchase agreement will define the responsibility for updating the product. If that responsibility lies with the vendor, responsivenesss to such changes is the key to a successful relationship.

The longer the lag time in implementing needed changes, the more excuses the user will have for not using the product. The result may be termination of the agreement or ill feelings on the part of the user that the vendor has not done what he agreed to do.

Keeping the lines of communication open may be a cliche, but it is a particularly difficult task when the user and vendor each speak a different language. Commitment of personnel, patience, problem identification and solution and responsiveness to change are the keys to open communication and, ultimately, to a successful user-vendor relationship.

Hill is manager of educational services at Information & Communications, Inc., Burbank, Calif.



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Reduces Overhead Costs

Merging Payroll, Personnel Avoids Dual Data Files

PHILADELPHIA — Although there are many payroll packages and a number of personnel system packages to choose from, a user may encounter numerous problems unless the management of these two closely related applications is extremely well handled.

That at least was the concern of a systems officer at the Philadelphia National Bank (PNB) which last year installed the integrated payroll and personnel portions of Wang Laboratories' Super package after looking at a number of other possibilities.

The real problem in trying to run two separate systems, according to Tom Spreeman, is that the systems cannot logically be separated. The planning and overhead required to maintain dual data bases of basically the same information cannot be justified, he added.

If there are separate systems, either one has to be the front-end entry point for both, including items only needed by the "back-end" system, or the user would have to build a special routine to insure that transactions get to the right system, Spreeman noted.

The special routine might be faster than using either payroll or personnel as the front end of a dual system but could present very tough control problems. "Suppose," he said, "an entry generates transactions for both systems, but for some reason one fails to post. Reentry of the original item would create another pair of transactions and could lead to double posting of the transaction that had been accepted in the first attempt."

Spreeman noted that the bank's move to Super was precipitated by its need for an automated personnel system. It already had Wang's Pay I payroll system installed and PNB "really wasn't looking to upgrade that."

Rigorous Selection Process

That may have given Wang an advantage, but the selection process was just as rigorous for the personnel system as for any package PNB acquires, Spreeman said, adding that he and the bank actually "came within a whisker" of getting a package from another vendor.

The sales brochures for Super were "really high quality," but PNB "never lets a package in the door" until it has been cleared by the systems and programming staff. That process eliminated the other package: "Our people said they wouldn't touch it with a 10-foot pole. The basic concepts were second-generation and we wanted something more adaptable to the hardware we had and that we expected [large-scale IBM 370s under OS/VS].

"So back to the drawing board. We had looked at Wang's Pay II when it first came out and hadn't been impressed. But they said they had made some updates and modifications so we went back and looked again," Spreeman continued.

It lacked the marketing eyewash of the other package, but the system was structurally sound and "certainly something we could live with." A review of the Wang package found third-generation concepts, including an ability to link into IBM's Information Management Systems (IMS) — which PNB has — if that seemed a good idea later

It was after that review that PNB gave any real thought to the fact that it knew the software house well, including its methods for providing updates and problem solutions. Wang and its predecessor — "we go back to Phil Hankins and Pay 0" — had never left the bank in the lurch on payroll and that had to be a plus in the evaluation.

By February 1976 the decision had been made to install the Super payroll and personnel systems. A small task force was organized and there was no real problem shifting payroll to its new environment, particularly since Wang provided a conversion routine, Spreeman said.

Build Data File

The old system carried very little historical data on each employee, but the task force had to capture what was there as well as build new fields to bring the personnel system into operation. The requirements of the federally mandated pension protection plan meant PNB had to create as good a base as it could.

Spreeman wrote a program (using Culprit from Cullinane Corp.) to go against the old Pay I files and extract the personnel data in transaction format so it could be entered directly into the new system. This involved some 110,000 transactions, he said, and was tougher than it might seem at first.

The old personnel-type fields were so limited that PNB had used codes wherever possible. Each code might represent three or four pieces of information and each of those had to be turned into a separate transaction for the personnel system under Super, he explained.

Once it had the Culprit-generated file of transactions from the old system and a second transaction file built up from the bank's manual personnel records, the task force used the long Columbus Day weekend to post them to the new system.

It took 33 hours to get the job done, "but when it came up, it came up clean. And that's what we wanted," Spreeman said with obvious satisfaction. Aside from JCL "and other normal conversion problems," the team's biggest problem was running out of space, he added.

"Being a normal, ultraconservative bank," he continued, "we ran parallel for a month after the conversion to be absolutely sure the payroll was right." The bank has three types of payroll — weekly, biweekly and monthly — so the parallel operation was long enough to run through at least one cycle for each type.

The task force ran tests of the 941A and W-2 reporting procedures and in January Spreeman said PNB was going ahead with them on a production basis.

One of the things the task force had to do to prepare for long-term pension control was to change from internally generated employee numbers to Social Security numbers as the key identifier.

The whole process from selection through implementation took a lot of time and effort but anything less might well have led to a system that didn't meet PNB's needs or that cost too much to operate, Spreeman concluded.

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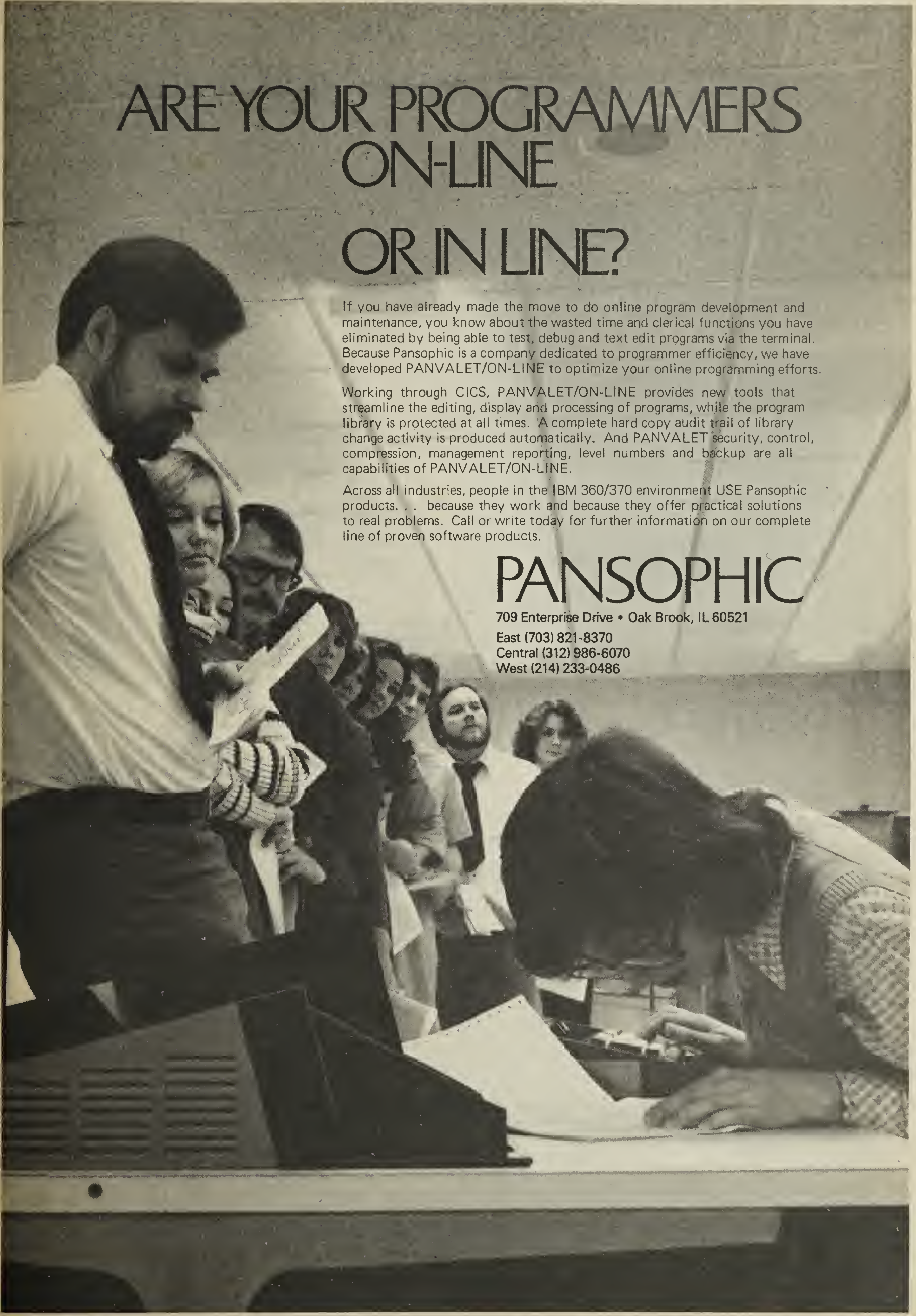

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Tax Package Gives McDonald's a Break

(Continued from Page S/8)

Smites was originally intended.

Last year, the corporation prepared its first consolidated federal income tax return using the package and the extensions it had developed. Other enhancements, apparently still under development, may lead to preparation of sales tax and payroll tax returns all based primarily on Smites.

'Universal Print' Routine

One extension that enables the accountants to adapt quickly to a new tax form is a "universal print" routine. Utilizing this piece of logic, the accountants mark on a preprinted sheet where they want figures to appear and what files the data comes from.

But while the user has been adding modules to Smites, the vendor has also been extending the capabilities of the basic package. Early on, Branham noted, for example, that the original designers didn't take into account such things as the number of subordinate corporations in an organization like McDonald's. Cogna fixed that, Branham acknowledged.

Working with McDonald's and other users, the vendor has coped with law changes, enlarged fields when they were found to be too small and in general upgraded the processing capabilities of the package.

With all the work done and in place, McDonald's now has a consolidated corporate tax calculation and return preparation system and, as far as Branham knows, "no one else has such a system." It allows the accountants to start with the closing of general ledger, go to the federal tax return and then to state returns "or any other tax calculation we want," all without any manual computation.

In-House Plan Considered

Although they chose a package as the keystone of the system, an in-house development was considered at one time, Branham recalled. But the classic concerns of time and resources ruled it out: "We wanted to develop something in the first six months [of 1974] and the package was considered the best way to do it at reasonable cost."

Benefits from using the system as it has developed are manifold. Branham has five accountants preparing returns so each is effectively responsible for about 6,000 returns in the course of a year. That's an unheard-of load, he said, adding that typically accountants would handle "up to 150" returns in a 12-month period.

His accountants can write any calculation formula they want with Smites, Branham continued. He has had no problems with taxing authorities, but he's not worried in any case since the system develops "very good audit trails."

The dollar payoff from use of the Smites-based system lies in Branham's ability to take advantage of things that just weren't possible with manual preparation of returns. The estimate of "millions of dollars" saved is based on his ability to file all returns three days before deadline, a sheer impossibility without full-scale automation.

But the tax manager saw other benefits as well. He noted the system provides his department with a tax planning and analysis tool which allows them to see such things as what kind of corporate structure and what place of incorporation is best. This, too, would be impossible to do manually, considering the scale of the McDonald's operation, he said.

Perhaps more important than anything else, Branham concluded, the system gives the individual accountant time to think and a tool so he can research past or future events to better understand their impact on his work.

He noted, for example, that his group has done an in-depth review of filing methods for state tax purposes "and they've saved us hundreds of thousands of dollars. We didn't know they existed before our study and they are available to others, but I suspect the others haven't had time to study them."

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When Comparing Competitors

User Experience Critical Factor in Program Selection

By Marc O. Cherbonnier
Special to Computerworld

Packaged application software is becoming more acceptable on a package-by-package basis as the word spreads from the user companies. The discriminating company doesn't buy software because of clever advertising; it collects data from the competing vendors and evaluates and compares each element of system information.

The comparison of these elements is weighted by particular user needs. One element always has a high weighting factor: user reputation. This explains the gradual vendor sales upswing rather than an overnight boom for the industry.

The Baltimore Gas and Electric Co. (BG&E) purchased Management Science America's (MSA) payroll package because it fared best in the utility's critique. The system was implemented at the end of 1971 and after the initial benefits of quicker system implementation and lower in-house programming cost, it was found:

- The documentation is much better than that for many of BG&E's inhouse systems and it is especially good for payroll users.
- The source programs (Cobol) require very little core (64K) and have abundant helpful comments.
- MSA's data base is logically structured in its arrangement of data and is flexible to accommodate enhancements.
- The cost of maintenance is very low. Payroll users utilize the package's special report generator by coding a few parameter cards and they have obtained over 400 varieties of simple reports or magnetic tapes in this manner.
- There seems to be a high user confidence in this system.

Over the years, BG&E has embellished the system's data base with personnel information, making it a payroll/personnel file. Then suddenly there was a huge need for more personnel data: ERISA, ESOP, OSHA, EEOC.

The demands of these federally mandated programs were shocking. Was there really a need for key entering all of this chronological data? No. Most of the current data required in these applications was already stored on MSA's data base.

It was decided to feed these new subsystems from the file with varying desired frequency. There is some redundancy of file data, but there is no redundancy in user effort or key entry.

In addition to federally required subsystems, the utility company has programmed and implemented a "life-to-date" personnel history system which also feeds from data on the MSA "mother" file. The only additional data required by this system is a few comments desired by our users in personnel. As this system has grown in size and integrity, it too has become a "mother" to yet other subsystems.

This package purchased seven years ago may well be getting out-of-date; all systems do. With the advent of new hardware and new data base management software, many of the systems are being reevaluated. But because of BG&E's remarkable success with this payroll system, it will always be mindful of the very good application software that MSA and other vendors are offering today.

Cherbonnier is employee systems team leader in the Information Systems Division of Baltimore Gas and Electric Co., Baltimore, Md.

Minicomputer Users Developing Appreciation of Software Costs

(Continued from Page S/7)

they bought a mini for 1/50th the cost of a mainframe, comparable software should be proportionally priced.

Answering that concern, Hamilton admitted there are differences in sophistication between minis and maxis, "but the effort to write programs for a mini is never 1/50th that which it would take to write programs for a maxi."

To make the point clearer, Hamilton quoted Bill Morris of Wang Laboratories who indicated it costs as much to develop the basic logic, application by application, on a mini as on a maxi. But the maxi user generally has to deal with an operating system and consider "a lot of time-dependent functions...you don't have on a mini."

Therefore Hamilton drew two conclusions: Mini software with features comparable to its maxi counterpart should cost less, but not 1/50th as much and proprietors are usually justified in charging what the uniformed mini software buyers have, until now, considered unjustified prices.

Competition, of course, tends to drive down prices, Hamilton noted later, and so do supply and demand when the former outweighs the latter. That, he added, helps explain the results of a survey taken of "most of the top accounting-oriented mini software packages."

In that survey, Hamilton found 23 packages for accounts receivable on mainframes, with an average cost of $9,454. The eight mini-based packages for this application cost an average $2,006. Results for accounts payable were 17 mainframe versions for an average cost of $6,806, and nine packages for minis at $3,294 each.

General ledger systems numbered 14 for the big machines at $8,071 and 13 for the little CPUs at an average of $4,753. Payroll packages amounted to 20 on maxis, averaging $7,196, and 10 on minis for $2,687 each.

Clearly an advocate of thinking users and proprietary packages, Hamilton concluded: "Total cost. Total system. Total solution. Is that a bad concept? No, not at all. It's what the user wants. Would alternative pricing be better? Certainly.

"Will it ever happen? The consensus is: Yes. But it will require education of the type Ed Horst is offering . . . The process has begun; class is in.

"But graduation is a long way off."

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User Learns Limits of Small System the Hard Way

(Continued from Page S/4)

ment control we wanted," Dwyer official Robert W. Vial recalled. "When IBM announced the 32 in January 1975, we felt we could give each hospital its own in-house computer at a lower cost than the single shared system we had contemplated."

He recognized, however, that the 32 and the IAP were meant for hospitals the size of Dwyer Memorial. He admitted he was worried the system "might be too small to handle the larger hospital's heavier work loads," but he brought it into the institution anyway.

Conversion at Holiday Park took longer than at Dwyer but that was a reflection of the degree of DP each had before the switchover and had nothing to do with the difference in bed capacity and patient volume, according to Holiday Park's controller, Jerry Harley.

Implementation moved along in both hospitals. Patient billing, accounts receivable, accounts payable and payroll are up and running, and general ledger will go on the system shortly, Vial added.

The early applications have been particularly effective. "Service revenues have increased because a system of this type will pick up patient charges that might otherwise be overlooked in a manual system," he explained.

"Financial control is greatly improved because of the timely reports the system provides including the aging analysis of accounts receivable and labor distribution analysis," Vial continued.

At Dwyer Memorial, billings now get out within three days of the patient's discharge instead of up to 15 days with the old system. Computer aging and reporting of overdue receivables also has a favorable impact on cash flow, and the system is capable of accounts receivable agings on a variety of bases: from insurance file date, from discharge date or from last payment date.

By contrast, "we really had no accounts receivable aging at all at Holiday Park and only very tardy aging at Dwyer Memorial prior to the computer installations," Vial noted.

Rough Waters

But even with that progress, things aren't clear sailing for the 32 and the IAP at Holiday Park.

Harley is unhappy with the system essentially because of its inability to really support an operation the size of Holiday Park. The system is good for small hospitals that don't want programming capability of their own, he acknowledged, but it is "not nearly big enough for our needs."

He is frustrated by the single-task operation of the 32. That is the primary reason the hospital has to run the system 20 hours a day, five days a week and eight hours a day over the weekend — and even then all the applications within the IAP are not installed, he said.

The applications themselves got mixed reviews. The patient billing and accounts receivable routines are "strong," he said, but the others aren't. Payroll "is not the best," according to Harley, who said it had weak spots in both performance and logic.

There are cases, he claimed, in which the documentation indicates calculations are handled one way but the program code does it differently. "And there is just no code in the program as supplied by IBM to perform state tax calculations," he added.

The irony of the old ad slogan lies in the fact that, having tried the IBM route, Harley is now actively implementing his general ledger application not on the 32 but on a time-sharing system from Microdata Corp.

That hardware, expected to be the sole DP facility for the larger hospital by mid-year, is the system Microdata long ago christened Reality.

User Groups Provide Forum for Problems

(Continued from Page S/8)

methods and procedures." The introduction of the age of technology ended the age of isolationism. No person, no management and certainly no technological marvel such as a computer is isolated from outside influence and needs.

So, how well is this proliferation of user conferences thriving? Of course some are floundering. But some have become an integral part of day-to-day computer operations.

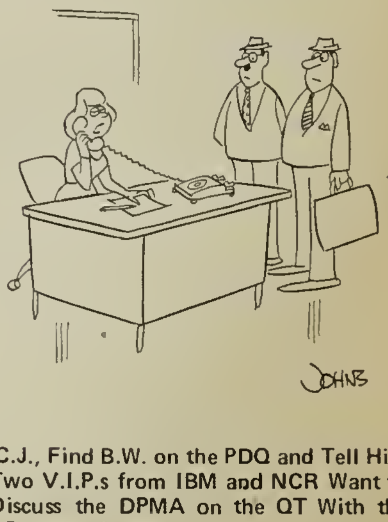
Cufam is the acronym given to the organization of customers who use either the General Ledger System or the Financial Information and Control System marketed by MSA. It was organized in 1970, with 20 users in attendance. Seven hundred users attended the annual meeting held in 1976, and almost 1,000 are expected to attend the 1977 meeting.

The organization is currently seeking to become officially incorporated.

In 1976 a Cufam advisory council of 12 was organized; its members represent the entire spectrum of interests in industry, management and computer hardware. The council meets four times a year and works closely with management on the long-range plans for the package. Detailed plans for the package are listed and discussed, with the proposals and enhancements made ready for the next release.

The existence of user group meetings has proven to be not only an asset, but a necessity for software users across the country. They are the medium through which managers coordinate with colleagues and developments are shared between users.

Imlay is active in the Software Industry Association of the Association of Data Processing Service Organizations (Adapso). He is also president of Management Science America, Inc.



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IMS users such as *American Airlines, Dow Chemical, TWA, American Can, The Hartford, Union Carbide;* and TOTAL users like *Combustion Engineering, Northwestern Mutual Life, Anheuser-Busch, Corning Glass Works, Eli Lilly* and *Holiday Inns* are a few who agree ASI-ST and data base belong together. In addition, ASI-ST provides an unequalled return on investment by maximizing the productivity of both man and machine. Since ASI-ST fully supports conventional data files as well as complex data bases, these benefits are not restricted to IMS and TOTAL users. To obtain more information contact:

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Summarizes Industry Trend

Report Gives Overview of Remote Computing Services

By Don Leavitt
Of the CW Staff

Remote computing service (RCS) networks often provide, in addition to "raw computer power," access to application software that is, at one end of the range, unique to a particular network and, at the other end, identical to software packages users can install on their own in-house equipment.

Details of what application software is available and where can be gathered from sales brochures, library listings and newsletters from the individual networks. Another source of information (and one that lends itself more easily to comparison of similar offerings) is the still-growing directory published by the Boulder, Colo.-based Association of Time/Sharing Users (Atsu).

This ring-bound catalog, now in two volumes, divides applications along very general lines — "Financial Analysis Systems," for example — and provides a standardized one-page format for each product an RCS vendor may have within that general class.

Obviously, reports from long-standing research firms such as Auerbach and Datapro also shed light on what is available and what users think of the offerings.

Complete Introduction

But an introduction to the full scope of the RCS industry has been compiled by Info-Dyne, Inc., a research and consulting firm located in Minneapolis. This report is more general than the references mentioned above in terms of specific applications, but is more detailed in terms of basic network capability.

Remote-Computing Services in the U.S....A Description (and a companion report about Canada) appears useful to the organization that is getting its first taste of "time-sharing" and to the installation that has ties with various networks and is becoming aware of how confused and possibly cost-ineffective such multiple usage may be.

In preparing its U.S. report, Info-Dyne worked with 28 RCS vendors and 50 users from all over the country and from a variety of industries. The users spent from $10,000 to over $7 million for outside services in 1975. They used an average of seven vendors during the year, although one user reported working with as many as 26 different vendors in that time frame.

The report, subtitled "Cost-Effectiveness and Key Issues," is divided into a user overview, a vendor overview, a comparative analysis and a discussion of benchmarking before providing a summary of industry trends.

The section on applications, within the comparative analysis area, traces both the logic behind using application software on a remote basis and the ways in which the types of things offered by the networks have changed over time.

Steady Library Growth

Starting with fundamentals, Info-Dyne noted that application package libraries have grown steadily since the inception of the RCS industry and that "patronage of an RCS vendor relieves the user of the need to establish or upgrade an in-house facility.

"Similarly, use of vendor-proprietary packages makes it unnecessary for the [user] to maintain a large [in some cases, any] program development/maintenance staff. The intelligent user can save a considerable sum of money in this way," Info-Dyne continued, cautioning, however, that this was "at the cost of becoming more or less dependent upon the [RCS] vendor."

The earliest generally offered library items were utility subroutines that could be called by the custom programs users wrote, the Info-Dyne report said. These were followed by various scientifically oriented sets of related routines including the Biomedical Data (BMD) packages of statistical analysis programs and such engineering aids as Stress, Cogo, Nastran and Strudl.

"In the rough-and-tumble marketing environment of the mid-1960s," the report said, addition of such packages to the libraries "was strictly a defensive...strategy: time as well as other constraints dictated that these items be acquired from outside and very nearly all vendors did so." All vendor libraries "looked very much the same" at this time, Info-Dyne noted.

Later movement to vendor in-house development resulted in some library differentiation. On the time-sharing side and "largely due to the prominence of the Bell System as a customer," heavy stress on electrical engineering became evident, the researchers reported, adding, however, that these programs were sufficiently generalized to appeal to other electronics firms as well.

On the remote job entry (RJE) side, billing, accounts receivable, payroll and financial analysis packages were, for the most part, developed internally by several vendors, Info-Dyne said, "but the more-or-less standard procedures inherent in these applications made the packages functionally similar."

As particular vendors zeroed in on particular market segments, one class of applications tended to dominate their RJE libraries, the report said, citing as an example Service Bureau Co.'s concentration on banking and finance.

The adage that the more things change, the more they stay the same appears to apply to the RCS world. The Info-Dyne report noted next, for example, that in the past few years "there has been a decided move to go outside for additional application packages" and "the never-great distinctions between vendor libraries are again tending to be minor."

The only break in this pattern, according to Info-Dyne, has been the choice of some vendors to develop proprietary data base management systems (DBMS). National CSS spent "well over $1 million dollars" developing Nomad, the report said, while other vendors turned to established products such as Total, System 1022 and System 2000.

In any case, according to Info-Dyne, DBMS packages, whatever their source, "are considered by the RCS industry as the most significant software product since development of time-sharing itself." In terms of revenue generation, there is adequate justification for this view, the report added.

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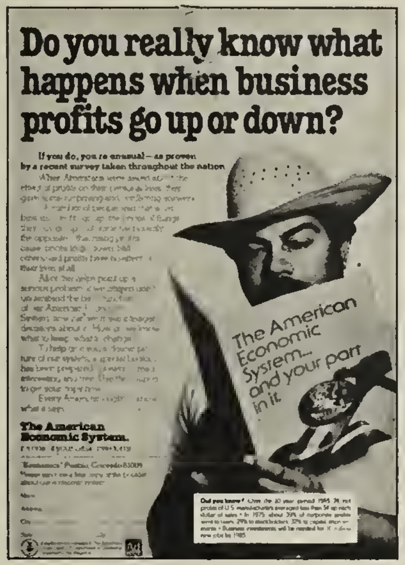
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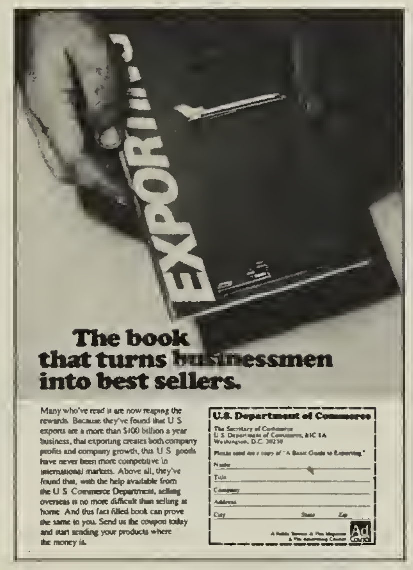
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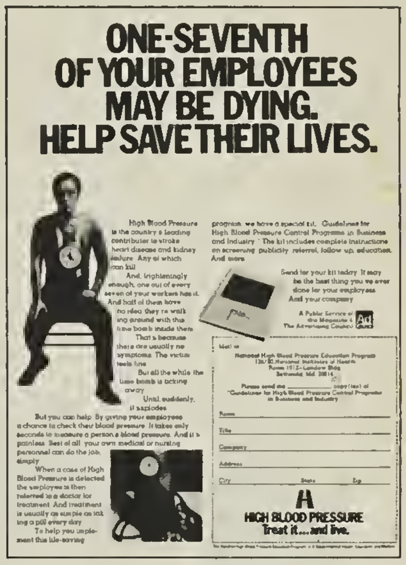
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'Speakeasy' Easily Supplemented To Conform to Individual Needs

By James M. Condie

Special to Computerworld

Because computational programs for many aspects of econometric research are at best difficult and expensive to write, there can be little justification for not using existing outside packages that will meet user needs.

The staff of the Board of Governors of the Federal Reserve System has been a user of application packages from outside sources for several years. Even so, we find we frequently need to modify packages to more closely conform to our special circumstances.

Several data analysis packages have achieved a degree of success at the board. These include Auto-Econ, which came from MIT years ago; Time Series Processing (TSP) from the developer at Harvard; and BMDP from UCLA.

The most noteworthy, however, is the Speakeasy package installed in December 1972 and distributed by Stan Cohen of the Speakeasy Center at Argonne National Laboratory, Argonne, Ill. The use of this package at the board has grown steadily; there are now more than 2,000 accesses per month by users from several divisions and for a variety of reasons in both the batch and interactive environments.

Speakeasy's popularity can be attributed to a number of factors, but two stand out.

First, it was designed for humans to use. All user control input is free form and composed of easy-to-remember English words and a few symbols whose meanings come from a natural notation. This makes the control syntax easy to learn and easy to remember by infrequent users.

For example, most readers will immediately know what the following sequences of statements will perform without having read any of the manuals.

```
REQUEST HEIGHT; REQUEST LENGTH
AREA = WIDTH * LENGTH
ACRES = AREA/43560
PRINT ACRES
Y=1, 4, 28, 35, 48, 9, 8
PRINT SUM(Y), AVERAGE(Y)
```

Of course, speakeasy is also capable of much more complicated usage including graphical output. A sampling of vocabulary might include such words as: ADJOINT, ANGLES, ANSWER, ARGUMENT, ASK, BACKUP, CLEAR, EIGENVALUE, FIND, GRAPH, HISTOGRAM, INVERSE, KEEP, MATRIX, MODEL, NOCOLS, OBJECT, RANKED, ROLLDOWN, SKEWNESS, SQRT, SUBSET, VECTOR, etc. Help in the use of any of these words is available not only from the manual but also from a Help Library for interactive users.

A second reason for this package's acceptance and widespread use is the ease with which it can be extended to fit the particular needs of a given installation.

The importance of this cannot be underestimated, since very rarely can a package developer anticipate all the users that may be imposed on his package. Quite often a package may do what it does exactly as desired but doesn't go far enough in certain area.

Methods must be provided such that users can add their special procedures and routines without a lot of bother and in a way that is independent of the basic package. Speakeasy provides for this by permitting the addition of extendable libraries in such a way that a user may freely mix his own routines with those supplied by the developer.

For example, Speakeasy comes with a command vocabulary of over 500 words. The Federal Reserve Board has supplemented this base with nearly 100 additional words. Other Speakeasy installations have also added to the vocabulary.

It is important to note that these additions can be implemented without any modification to the vendor-supplied package. It is even expected that many users will add to the vocabulary and complete instructions for doing so are included with the package.

This provides an enormous development potential; any extension made at one user's site is easily transportable to any other site.

Out of this whole process comes an ever-growing and changing package capable of meeting new computational needs.

Condie is assistant section chief, mathematical/statistical services, in the DP Division of the Board of Governors of the Federal Reserve System, Washington, D.C.

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DOCS is quickly and simply installed on any system. All that the user need do is catalog the DOCS distribution tape to his Core Image library, define where the DOCS hard copy file is to be located and execute DOCS. Total installation time required is under 10 minutes.
DOCS functions concurrently with EDOS, GRASP, DOS/MVT, DOS/RS, POWER II, ASAP, POWER/VS, and ITEL's DOS/VS executing on a S/360 and will enhance the system operation by providing improved facilities for the use of these packages while DOCS is controlling SYSLOG.
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SPEED
DOCS provides significant through-put improvement by the very nature of the speed of the 3277 display unit alone. Operators can even pre-answer messages on the console.

MULTIPLE CONSOLES
DOCS allows from 1 to 16 3277 display unit consoles to be used simultaneously as SYSLOG devices.

MULTIPLE OUTSTANDING REPLIES
DOCS permits messages followed by Reads to the typewriter to remain unanswered without tying up the system. All outstanding Reads are shown in high intensity on the display console(s)

REDUCED SUPERVISOR SIZE & OVERHEAD
DOCS does away with any need for the Console Buffering option in DOS or DOS/VS thus providing a savings in the core required by the users' supervisor as well as greatly reducing significant overhead to the entire system. Experience has shown that total through-put improvement with DOCS installed may approach 10% to 20%.

Send requests for DOCS to C F S. License agreements along with detailed information will be sent by return mail. Inquiries may be directed to:

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DOCS will continue to operate, and allow the entire system to operate, if the 1052, 3210 and 3215 typewriter becomes inoperable. DOCS spools all typewriter data to a hard copy disk file for later printing thus obviating the need for the typewriter to be on-line at all times. Hard copy is asynchronously provided if the 1052; 3210 and 3215 is available. A hard copy listing is also available through a utility program which the user may execute in any problem program partition to list the hard copy file on SYSLST.

NO USER PARTITION REQUIREMENT
DOCS executes in its own pseudo-partition thus allowing the user unrestricted use of the problem program partitions.

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DOCS provides a separate External Interrupt key for each partition (replacing the use of the MSG command). This is especially convenient for EDOS users. This function is also useful for GRASP users when communicating with a background partition problem program. A unique interrupt key is provided for each DOS/MVT region.

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